DOCUMENT RESUME

ED 375 840 IR 055 231

TITLE	Door to the World: Iowa Libraries and the Electronic Information Highway.
INSTITUTION	Iowa State Library, Des Moines.
PUB DATE	Mar 94
NOTE	16p.; Includes excerpts taken from a publication produced by a consortia of Utah library organizations.
PUB TYPE	Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Academic Libraries; Access to Information; Elementary Secondary Education; Futures (of Society); Higher Education; *Information Networks; *Library Networks; *Library Role; *Library Services; Public Libraries; School Libraries; Special Libraries; State Libraries; Technological Advancement
IDENTIFIERS	Information Age; *Information Infrastructure; *Information Superhighway; Iowa

ABSTRACT

This document examines the roles, issues, and needs of Iowa libraries in the age of the electronic information highway based on the responses of library practitioners to a request from the State Library of Iowa to briefly address these concerns. The report begins with brief discussions of traditional library services; electronic library services; new functions of libraries in the age of information networks; and issues involved in this technological advancement. Next, the impact of the new electronic revolution on academic, public, school, and special libraries is examined. For each type of library, the following information is presented: a definition of the library type; the status of the library in Iowa; issues and challenges for these libraries; and the impact of technology on the library. The report concludes with four objectives of Iowa's connected libraries: (1) to open the electronic door connecting customers to the information highway; (2) to create and maintain electronic resources as well as access to remote resources; (3) to teach customers how to access and use the ever-changing array of available resources; and (4) to continue to meet the growing demand for traditional library services. (JLB)

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DOOR TO THE WORLD

IOWA LIBRARIES AND THE ELECTRONIC INFORMATION HIGHWAY

INFORMATION IOWA

STATE LIBRARY OF IOWA

MARCH 1994

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Excerpts taken from a publication produced by a consortia of Utah library organizations and distributed by the Utah State Library Division.

What is the role of libraries in the Information Age? Will information be accessible to all Iowa citizens in a technology-driven society? Why do libraries need access to the Iowa Communications Network (ICN)? What is the electronic information highway and why is it important?

To answer these and many other related questions, the State Library of Iowa asked library practitioners to briefly address the issue of libraries and the electronic information highway. This document was produced so that we may all more fully understand the roles, issues, and needs of Iowa libraries in the age of the electronic information highway.

Traditional Library Services

As repositories of the human record for thousands of years, libraries:

- collect and organize information;
- preserve information; and
- teach and mediate access to information.

These responsibilities are accomplished through four types of libraries: public, academic, school, and special. Each type is unique because of different primary customers, different funding sources, and different approaches to major library functions. Public libraries are funded primarily by local government, build broad-based general collections, and serve the taxpayers of the local governments which fund them. Academic libraries build more in-depth collections designed to meet the needs of students and faculty at the colleges and universities which support them. School library media centers are funded by local school districts to meet the needs of students enrolled in K-12 education programs. Special libraries are funded by corporations, associations and government agencies to meet member or employee needs.

Electronic Library Services

Automation is revolutionizing libraries and the publishing industry in ways not seen since the invention of the printing press. Combining computer and telecommunications technologies allows libraries to access networked electronic information through an electronic highway.

Elements of that electronic highway already exist. The Internet, an electronic gateway to thousands of databases and information resources, is well known. Through the ICN and other telecommunications providers, Iowa libraries can access this vast database of information resources, triggering the creation of "connected" libraries.

Accessed in person or electronically, a "connected" library links customers with information

owned locally in a traditional or electronic format, across the nation or around the globe. In the future, librarians will guide and coach library customers learning to maneuver in worlds of information available electronically.

New Functions

Current library practice is changing dramatically. For example, libraries have concentrated on enlarging collections of locally owned materials. Now, the emphasis will shift from "ownership" to "access" for lesser used items or time/date sensitive information.

"Connected" libraries will:

- Provide gateway services by linking customers, in person and electronically, to the electronic highway;
- Host information by supporting electronic information files, as well as, providing links to external information sources;
- Publish electronic information through the creation and maintenance of unique files of local information;
- Serve as consultants, constantly shifting and rapidly increasing the array of information available.

Issues

Traditional distinctions among types of libraries and between libraries and readers will be blurred. "Connected" libraries will face many developmental challenges. Some of the challenges for Iowa's libraries include:

- Assuring compatibility of automated library systems;
- Obtaining sufficient funding for electronic information;
- Building "wired" campuses in our system of higher education;
- Educating library customers and training current students in new information literacy skills;
- Training library staff in new skills;
- Building an effective statewide library network;
- Developing new models for cooperation among libraries based on a new electronic infrastructure.
- Taking full advantage of the developing information network.

The greatest challenge is to respond to all these changes at a time when public funding is limited and the demand for traditional library services has never been higher. The challenges are formidable, but the rewards and new possibilities are exciting.

ACADEMIC LIBRARIES

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What Is an Academic Library?

Academic libraries are essential resources for students and faculty in higher education. In order to support the diverse educational and research programs of colleges and universities, academic libraries build large, complex collections of scholarly books, journals, microforms, maps, photographs, audio/video materials, and electronic information. Traditionally, the excellence of an academic library has been measured by the size and subject breadth of its collections. However, with the exploding growth of electronic information, it is increasingly likely that libraries will be measured by their ability to organize and provide access to the incredible number of electronic resources now available.

Iowa Focus

Higher education in Iowa includes 74 academic libraries or library systems. While Iowa academic libraries vary in terms of collection size, staffing, and services offered, all have experienced serious budget losses in acquisitions due to inflation and actual budget cuts. As a result, Iowa academic libraries are purchasing less and less, while new scholarly output has steadily increased. Serial cancellation projects are common, and the decrease in the number of books purchased is astounding. This trend has already weakened Iowa's academic libraries and threatens their abilities to adequately support higher education. With these difficulties, the nature of academic library acquisitions is changing dramatically to incorporate access as well as ownership, and to accommodate the quickly evolving types of electronic resources.

Iowa Issues/Challenges

- Each academic library must now define a core collection, those materials absolutely necessary to fulfill academic obligations. Beyond that core collection, acquisition strategies will increasingly shift from ownership to access.

- Resource sharing is essential. Fortunately, there exist many support systems: Iowa Resources and Information Sharing, the state interlibrary loan system; the OCLC Union List of Serials; the jointly-used Pony Express delivery service; fax technology; and statewide accessibility of local on-line library catalogs through projects such as the Iowa Research and Education Network. Of growing importance in resource sharing is the use of text-digitizing technologies.

- Increased reliance on commercial document delivery systems is inevitable as academic libraries attempt to offset the spiraling costs of journals/periodicals by selectively purchasing individual articles instead of continuing expensive serial subscriptions.

- Printed indexes and abstracting tools are rapidly being replaced with powerful electronic versions. Academic libraries face a variety of choices involving ownership, access, and cooperative purchase agreements for these necessary research tools.

Academic libraries have always shared responsibilities with their colleges and universities for preparing students to be lifelong learners. The character of our information society makes that responsibility even more important. As library users increasingly access their libraries' collections remotely through networked on-line library systems, their need to come to the library decreases. However, the need for the library to increase the levels and amount of instruction is dramatic. In order for students to be successful in their college careers and their professions, academic librarians must be ready to train students to use the increasing number of electronic information resources.

Impact of Technology

No longer can technology be viewed as a separate issue for academic libraries. Technology is integral to what is purchased; to how local and remote library collections are accessed; to sharing and delivery of information; to instruction of students and faculty using library services and resources; and to the conduct of all library operations. To ensure that students and faculty of Iowa academic institutions have adequate access to up-to-date, cutting edge information for teaching and research, Iowa's academic libraries must provide new and sophisticated computer and communications links.

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PUBLIC LIBRARIES

Nicky Stanke, Director
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What is a Public Library?

Public libraries are local institutions that provide a point of access for members of the community to informational, recreational, and educational resources. Public libraries serve toddlers and the elderly, students and the homeless, business owners and the unemployed. The community itself shapes the public library, identifying the primary and secondary roles the library will play. The library designs services to make the roles tangible and meaningful in the lives of its citizens.

Although each public library is unique, virtually all are built on the same ideological foundation: a belief in the rights of all citizens, regardless of age, race, faith, personal beliefs, social status, physical abilities, or educational background, to enjoy free and equal access to the broadest possible spectrum of information.

Public libraries are supported primarily from local sources, most often through the property tax. Fines, fees and donations account for a modest percentage of the total revenue. Public libraries are governed in accordance with state and local law. In Iowa, the local ordinance provides for the appointment of a library board of trustees to oversee the administration, operations, and expenditures of the library budgets. The minimum taxation rate is set by the Code of Iowa as are the provisions for any change in the governance. The library director is appointed and assigned duties and responsibilities as defined by the library board.

Iowa Focus

Iowa currently has 529 public libraries. All of these, with the exception of three, are municipal libraries. Populations served range from 193,187 (Des Moines) to 85 (Morley). In FY93, the libraries in Iowa derived 82.3 percent of their income from local sources, compared to the national average of 76.8 percent. Only 1.8 percent of Iowa's public library operating income came from state or federal sources. Other sources accounted for 13.2 percent of the income, including gifts, grants, bequests, contracts, fines, and fees for services. The disparity in per capita expenditures is pronounced, ranging from a low of $3.61 to a high of $104.95. Even among libraries serving populations of 45,000 and over, per capita expenditures were as low as $14.38 and as high as $41.71.

Iowa's public libraries circulated 25.1 million items and borrowed more than 100,000 of these from other libraries through interlibrary loan. Equalized across the population, every Iowan checked out over one item per month, 12.42 annually, from public libraries in the state in FY93.

Iowa Issues/Challenges

Public libraries in Iowa face issues similar to those faced by public libraries throughout the country--inadequate resources, low levels of funding, increasing demands for information in new formats, and threats of censorship. However, these issues assume a particular form in Iowa.

- Disparity in public library funding creates unequal levels of service. The ability to access information electronically instead of owning information provides all Iowans equal opportunities.

- Public libraries in Iowa are particularly dependent on the currently "frozen" property tax for operating revenue. The property tax generates funding for all city operations, putting the library in competition with police, fire and street maintenance for revenue. Rollbacks and capped growth have meant little or no increase in operating dollars, despite the above average inflation rates of print, audiovisual, and digitized information sources needed by the citizenry.

- The highly rural nature of Iowa that lends so much to its appeal and quality of life also adds a strain to the ability of its residents to reach needed information and educational resources. Networking and resource sharing are imperative for a scattered population as an effective and cost-efficient response to demands for information.

- The aging population of Iowa challenges all public services to a higher level of accessibility and a vital need for intensive economic development. It is the growth of the economy and of the work force that will enable Iowa to provide an appropriate quality of life for retirees and elderly.

Technology Impact

Public libraries serve the full spectrum of society. The challenges to the library include finding staff time to evaluate, compare, review, and learn the multitude of resources available. Library boards and directors must prioritize the products for inclusion into the library's selection of resources. In addition, staff must be ready to train a broad range of clientele to use the equipment and the resources to provide discreet and direct access. Collection, staff and access are all critical elements that the public library must balance with its mission, role and community needs.

The power of the new technologies cannot be denied in the "information highway" of tomorrow. Public access to the highway in a politically neutral institution such as the public library is vital in the prevention of a widening of the gulf between the information rich and the information poor.

SCHOOL LIBRARIES

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What is a school library media center?

A school library media center functions as an integral part of the instructional program in the school. The interchange between the library media center and the classroom exhibits itself in many ways:

> A library media specialist meets with teachers to plan an instructional unit...a small group of children come to the library media center seeking information about bridge construction, inspired by a physical science lesson...a social studies class meets in the library media center to learn how to save data captured online...a library media specialist helps a class learn how to extract information from articles...students learn to use a desk top publishing program to produce a newspaper as a language arts project...a library media specialist offers an inservice program for teachers on how to search in CD-ROM-based references.

The mission of the school is to prepare students for life. Life in the 21st century will require knowing how to pose a question, how to find information from many sources, how to interpret what is found, how to collaborate with others in the learning process, and how to communicate what is learned. These skills make up the curriculum of the school library media program.

Iowa Focus

Iowa public school library media centers support a population of over 480,000 students in 397 school districts. Those districts range in enrollment from 51 to 30,372.

The State of Iowa has established standards for school library media and technology programs:

> 12.5(10) Technology in the Curriculum. The Board shall adopt a plan for the efficient and effective use of technology in the instructional program. The plan shall provide for the understanding and use of current technology by staff and students and shall include a procedure to review the district's utilization of technology as a teaching and learning tool.
>
> 12.5(22) School Media Center and Required Staff. The Board shall establish and operate a media service program to support the total curriculum. Each attendance center shall have a media center except that attendance centers sharing a physical facility could have a single media center. The Board shall adopt a policy and procedure for selection, replacement, gift acceptance, weeding, and reconsideration of school media center and text materials. The collection shall foster a nonsexist, multicultural approach for curriculum studies and individual interests. The budget of each media center shall include funds for replacing and updating materials.
>
> Each media center shall be supervised by a qualified media specialist who works with students, teachers, and administrators. A full range of information sources, associated equipment and services from the media center staff shall be available to students and the faculty. Each media center staff shall be available to students and the faculty. Each media center shall be accessible

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to students throughout the school day. The school or school district shall develop and implement a curriculum guide covering all grade levels operated for instruction and reinforcement of information search and media skills integrated with classroom instruction.

The state standards set a direction for providing all students in Iowa with equitable opportunities. However, school districts are aligned on a continuum of implementation of these standards from seeking the minimum to seeking excellence. For the 1993-94 school year, 67 school districts of varying sizes have sought waivers from meeting this standard, while other school districts are striving to increase their support for library media programs with an eye to the demands of the "Information Age." Books, materials and technology vary among districts; teachers' skills in uses of new technology and in accessing information range from those who have no skills to those with high levels of expertise. School library media centers are financed as part of the general education funding. There is no categorical funding for library media and technology programs. Local control benefits those students whose districts are able to support school library media programs; however, it leaves some districts with minimal resources. This disparity results in inequitable opportunities for the students of Iowa.

Iowa Issues/Challenges

The challenges facing school library media programs include providing equitable access to current and relevant information to students attending both rural and urban schools; ensuring that all students leave Iowa's public schools with the ability to access, store, retrieve and communicate information electronically; and ensuring that all students leave public schools with the skills to evaluate information and information sources for reliability, recency, and relevance.

Technology Impact

The school library media program is intended to ensure that all students and staff are effective users of ideas and information. School library media centers cannot afford, nor could they house, the vast amount of information available today. However, school media centers bear the responsibility to graduate students who have learned how to harness information and use it productively. That learning cannot occur without appropriate resources. Technology can bring data to schools, providing children in all settings the opportunity to learn to manage the ever-growing store of information.

Access to online information through the Internet, availability of computers and peripheral equipment, communication connections, continuing education to improve the information technology skills of staff, and availability of appropriate software are essential for school library media centers to accomplish their goals. It is the role of the schools to prepare children for life in a complex, information-rich world. Within these schools, the school library media center should be the information hub of the school community--connected to the world.

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What is a Special Library

Special libraries generally serve a limited body of users and are located in nontraditional settings, such as manufacturing plants, hospitals, or government agencies. Their collections are frequently small and limited in subject scope. Access to the library's services may be restricted.

A special library delivers services that are tailored to the mission of the organization it serves. Special libraries generally emphasize access to information over collection development and stress current awareness services to their customers. Staff in special libraries develop significant subject expertise and emphasize providing information to their customers rather than expecting customers to learn how to locate information on their own. Special librarians frequently work under significant time pressures, i.e., meeting manufacturing or report deadlines, and often provide value-added services such as information analysis or evaluation.

A 1989 survey of members of the Special Libraries Association showed that more than 60 percent had access to electronic mail and internal online databases, 73 percent had fax machines, and 87 percent searched external online databases.

Iowa Focus

In Iowa, special libraries are located in hospitals, government agencies, educational institutions, museums, businesses, agricultural and manufacturing companies, publishing firms and banks. These libraries are diverse: They are very large and very small; state-supported or privately funded; open to the public or closed to public access; and serve nonprofit institutions or for-profit institutions. The 1993 Iowa Library Directory lists 118 special libraries in Iowa.

Iowa Issues/Challenges

The electronic information highway presents special libraries with an extraordinary opportunity. The highway and its associated technologies will provide access to an unprecedented array of information, education, and communications capabilities freed from the constraints of time and geography. Special librarians have the skills and expertise necessary to navigate in this electronic environment. The telecommunications infrastructure must be in place and there must be some standardization to ensure that networking connections work seamlessly and that libraries, their internal users and external customers can communicate rapidly and transparently.

The organizations in which Iowa's special libraries are located are experiencing dramatic changes in organizational culture. Many organizations are evolving away from a traditional hierarchical model to flatter, team-based organizations that are closer to the customer. Employees frequently work on "ad hoc" teams or in work groups. New data communications technologies such as electronic mail allow people to cut through the organizational hierarchy and develop direct contacts. Continuous quality improvement, reduced cycle time, and business process redesign efforts dictate that organizations with fewer layers of staff need advanced communications and information technologies to provide rapid, quality services to their customers.

The wide use of data communications and other information technologies has a direct impact on special library budgets and staffing. Generally, technology increases the need for staff and space, and more of the special

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library's budget goes toward access rather than ownership. As the services special libraries provide become more customer-centered and "customized", library staff act as information analysts. More of the special librarian's time is spent filtering out unwanted information or summarizing the information to save the customer's time. These "value-added" library services require highly-educated library staff, skilled in the latest information technologies.

The dramatic advances in data communications and networking and the proliferation of online databases and electronic information resources creates an immediate need for training for special library staff. These electronic information resources are also becoming increasingly available to customers at public access terminals in the library or on computers on the users' desktops. Customers now see their special librarians as information consultants, and special librarians must add another role to their already challenging workload--that of instructor in the use of the new information technologies.

Data communications and networking, electronic mail, fax machines, electronic document delivery, scanners, document imaging, etc. are powerful productivity tools. Organizations that substitute electronic mail for the cost of postage or telephone calls can provide faster information at lower costs. The electronic information highway becomes a part of the marketplace, allowing organizations to make direct customer contact--buying, selling, advertising, conducting research, providing electronic customer support--thereby gaining an advantage over their competitors.

Technology Impact

Declining library budgets and soaring prices for journals and reference materials have forced special libraries to carefully evaluate the use of these materials and to drastically reduce purchases. Online access to thousands of information resources means a shift from collecting and shelving large journal collections and expensive reference materials to electronic, just-in-time document delivery.

The move toward the "virtual" library--a library not bound by physical walls--means the library can provide access to materials wherever it resides. Where previously libraries and librarians have been tied to a building and the customer had to go to the library to get information, new technologies allow customers to communicate information requests to the library electronically. The library staff can, in turn, access print or electronic information resources, and return the answer to requests electronically.

Advances in computer technology and data communications create differences in organizational behavior. When employees have access to internal and external databases from their desktops, the result is a change in organizational culture with delegation of responsibility and accountability further down in the organization. The use of information technology and the trend toward work teams creates a more interdisciplinary work arrangement requiring collaboration, cooperation and communication. Data communications capabilities also mean that some employees might work at home or "telecommute", communicating with the office electronically. The speed with which information can be located and delivered means library users come to expect ever faster delivery of information, and increased time pressures for special librarians.

The Internet and the electronic information highway have evolved over a period of more than 25 years, but until recently were used mostly by academics and researchers for the exchange of information. The proliferation of information resources and the desire by millions of users to access the Internet has created a tremendous need for information navigation tools. The ever increasing amount of information available ensures the need for information professionals and their expertise at organization, locating, retrieving, and filtering information. There will be an increasing need for education and training of these "cybrarians", librarians able to navigate in "cyberspace", or the electronic information highway.

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SUMMARY

Iowans are becoming more and more dependent on information--information impacting every facet of their lives. By linking library expertise and resources with new technologies, Iowa's "connected" libraries will:

- open the electronic door connecting customers to the information highway;
- create and maintain electronic resources as well as access remote resources;
- teach customers how to access and use the everchanging array of available resources; AND
- continue to meet the growing demand for traditional library services.

Such services, though natural to libraries, require planning, cooperation, financial investment and a recognition of the importance of libraries in the delivery of information.

Never has there been a more exciting time for library service in Iowa. The same can be said for the State of Iowa. Iowa is positioned to lead the nation. With its library and telecommunication resources, Iowa can offer its citizens access to the world without leaving the beauty, tranquility and safety of rural America.

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